ULTRA FAST RECOVERY POWER RECTIFIER

Features

- Low forward voltage drop
- Ultrafast reverse recovery time : trr(Typ.)=20ns
- High speed switching
- Low power loss and High efficiency
- Full lead (Pb)-free and RoHS compliant device

Pin Configuration
Pin 1: Cathode
Pin 2: Anode

SOD-106

Applications

- General purpose
- Switching mode power supply
- Free-wheeling diode for motor application
- Power switching circuits
- DC-DC converter systems

Product Characteristics

$I_{F(AV)}$	3A
V_{RRM}	400V
V_{FM} @ Tj=125℃	1.05V
t_{rr} (Typ.)	20ns

Description

The SF3A400H is specially suited for switching mode base drive & transistor circuits. The device is also intended for use as a freewheeling diode in power supplies and other power switching applications.

Ordering Information

Device	Marking Code	Package
SF3A400H	3A4H	SOD-106

Marking Information

3A4H = Specific Device Code
YWW = Year & Week Code Marking
-. Y = Year Code
-. WW = Week Code
■ = Color band denote cathode

Absolute Maximum Ratings (Limiting Values)

Characteristic	Symbol	Value	Unit
Maximum repetitive reverse voltage Maximum working peak reverse voltage Maximum DC blocking voltage	V_{RRM} V_{RWM} V_R	400	V
Maximum average forward rectified current	$I_{F(AV)}$	3	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}	60	A
Storage temperature range	T_{stg}	-45 to +150	℃
Maximum operating junction temperature	T_J	150	℃

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Maximum thermal resistance	junction to ambient	$R_{th(j-a)}$	76	℃/W

Electrical Characteristics

Characteristic	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Peak forward voltage drop	V_{FM} (1)	I_{FM} = 3A	T_j=25℃	-	-	1.30	V
			T_j=125℃	-	-	1.05	V
Reverse leakage current	I_{RM} (1)	$V_R = V_{RRM}$	T_j=25℃	-	-	5	uA
			T_j=125℃	-	-	200	uA
Reverse recovery time	t_{rr}	I_F = 0.5A, di/dt =-100 A/us		-	20	30	ns
Junction capacitance	C_j	$V_R = 4V_{DC}$, f=1MHz		-	40	100	pF

Note : (1) Pulse test : $t_P \leq 380\ \mu s$, Duty cycle $\leq 2\%$

Rating & Electrical Characteristic Curves

Fig. 1) Typical Forward Characteristics

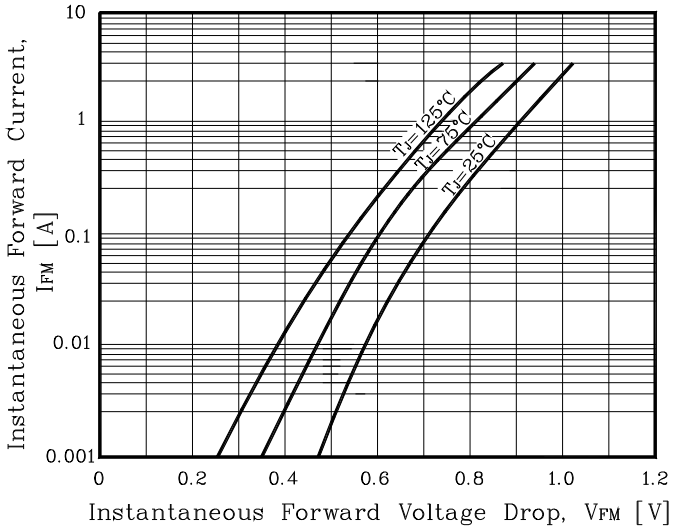


Fig. 2) Typical Reverse Characteristics

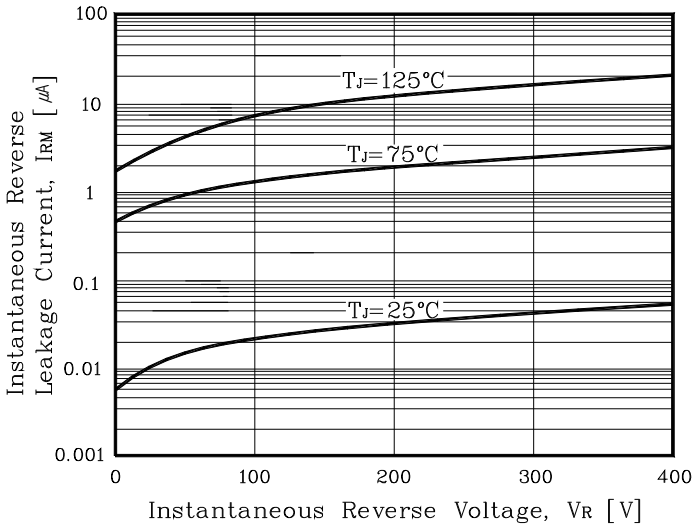


Fig. 3) Maximum Forward Derative Curve

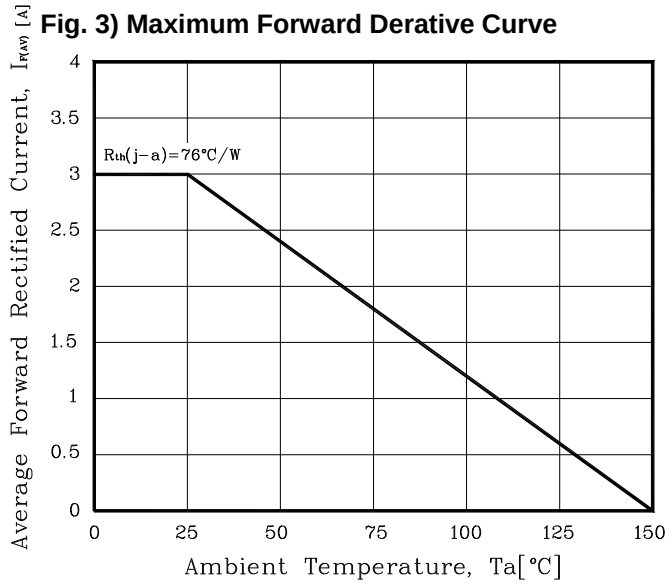


Fig. 4) Forward Power Dissipation

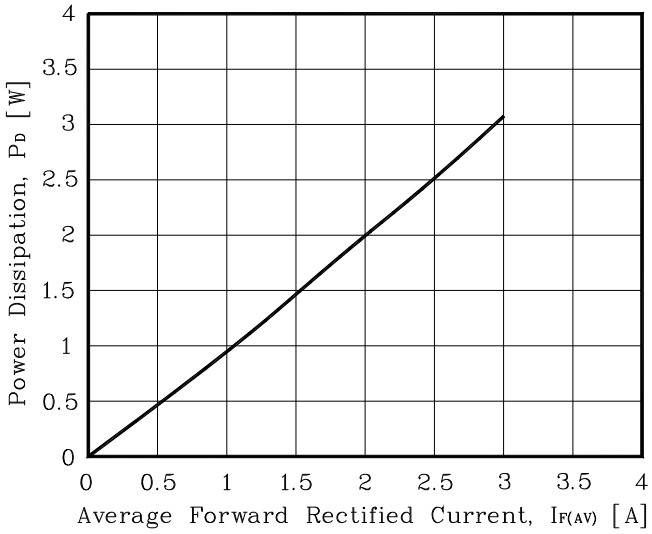


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current

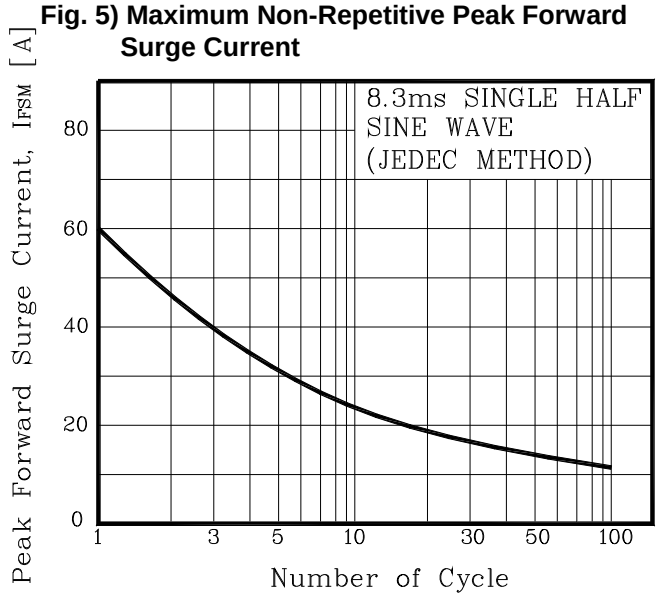
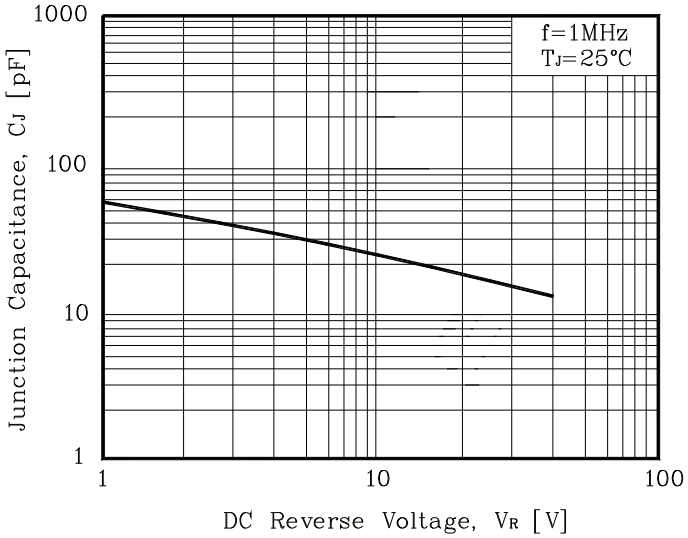
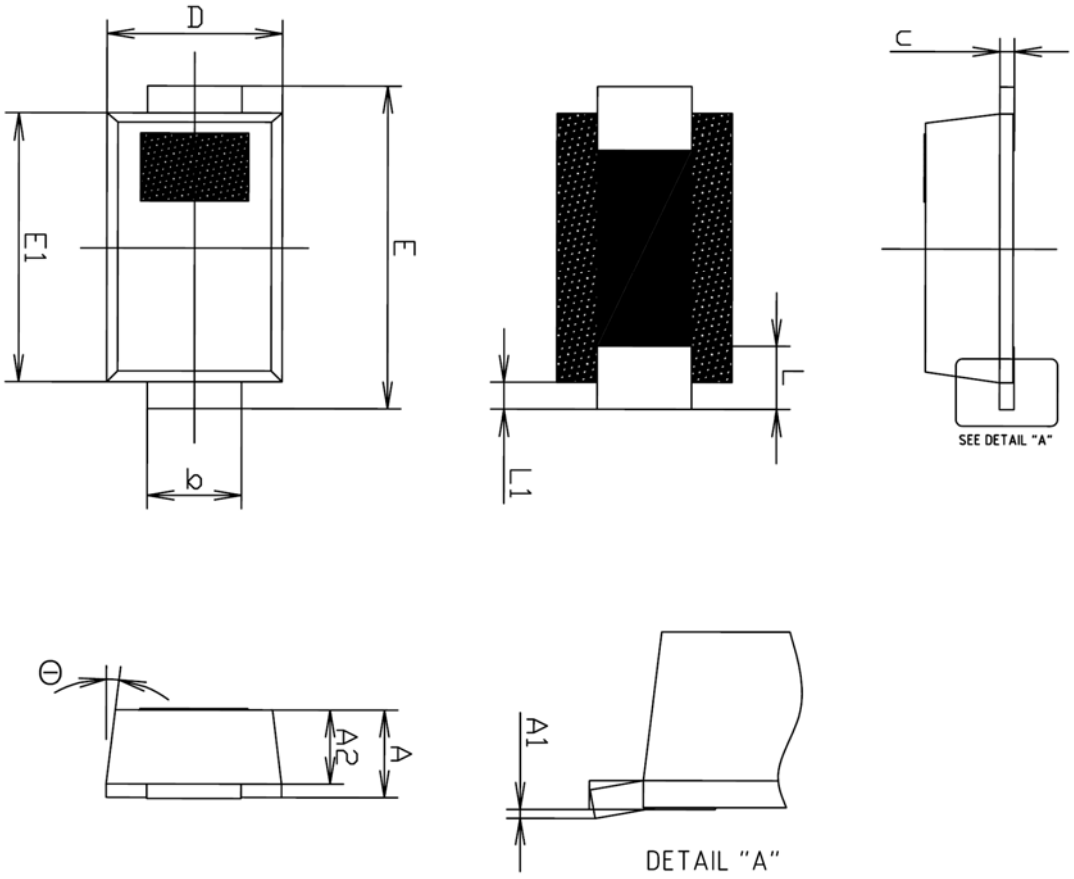


Fig. 6) Typical Junction Capacitance

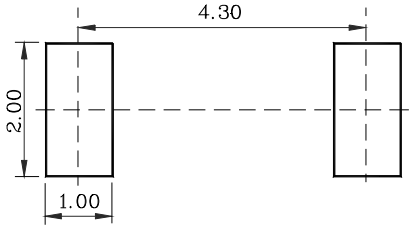


Package Outline Dimension (Unit: mm)



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	1.25	1.30	1.35	
A1	0.00	—	0.10	
A2	1.05	1.10	1.15	
b	1.35	1.42	1.49	
c	0.17	0.22	0.27	
D	2.50	2.60	2.70	
E	4.60	4.80	5.00	
E1	3.90	4.00	4.10	
L	0.79	0.94	1.09	
L1	0.30	0.40	0.50	
Θ	4°	—	10°	

※ Recommend PCB solder land (Unit: mm)



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